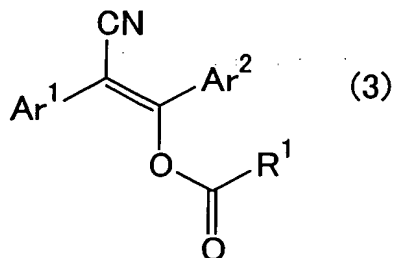
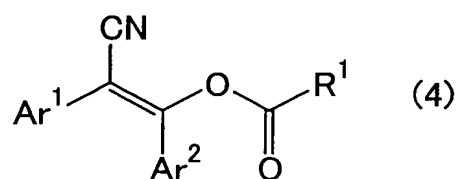


## CLAIMS

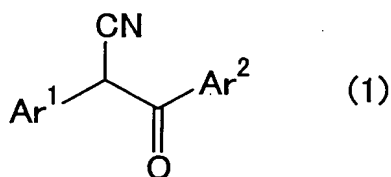
1. A process for stereoselectively producing E-3-acyloxyacrylonitrile compound of formula (3)



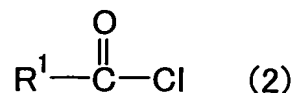
wherein Ar<sup>1</sup> and Ar<sup>2</sup> are independently of each other an aromatic substituent that may be substituted, and R<sup>1</sup> is an alkyl group that may be substituted, or an aromatic substituent that may be substituted, or Z-3-acyloxyacrylonitrile compound of formula (4)



wherein Ar<sup>1</sup>, Ar<sup>2</sup> and R<sup>1</sup> have meaning similar to the above, which comprises reacting 3-oxopropionitrile compound of formula (1)



wherein Ar<sup>1</sup> and Ar<sup>2</sup> have meaning similar to the above, with an acid chloride of formula (2)



wherein R<sup>1</sup> has meaning similar to the above, characterized in that the reaction is conducted with removal of hydrogen chloride as a by-product from the system without using a base, or by using an organic base as a base or an inorganic base of alkali metal or alkaline earth metal as a base, to thereby regulate

stereostructure of reaction product.

2. The process for stereoselectively producing E-3-acyloxyacrylonitrile compound according to claim 1, characterized in that the reaction of the 3-oxopropionitrile compound of formula (1) with the acid chloride of formula (2) is conducted with removal of hydrogen chloride as a by-product from the system without using a base.

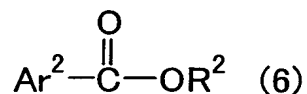
3. The process for stereoselectively producing E-3-acyloxyacrylonitrile compound according to claim 1, characterized in that the reaction of the 3-oxopropionitrile compound of formula (1) with the acid chloride of formula (2) is conducted by using an organic base as a base.

4. The process for stereoselectively producing Z-3-acyloxyacrylonitrile compound according to claim 1, characterized in that the reaction of the 3-oxopropionitrile compound of formula (1) with the acid chloride of formula (2) is conducted by using an inorganic base of alkali metal or an inorganic base of alkaline earth metal.

5. The process according to claim 1, 2, 3 or 4, wherein is used 3-oxopropionitrile compound of formula (1) wherein Ar<sup>1</sup> and Ar<sup>2</sup> have meaning similar to the above, which is produced by reacting an acetonitrile compound of formula (5)



wherein Ar<sup>1</sup> has meaning similar to the above, with an aromatic ester compound of formula (6)



wherein Ar<sup>2</sup> has meaning similar to the above, and R<sup>2</sup> is an alkyl group that may be substituted, by use of alkali metal alkoxide in an aliphatic hydrocarbon solvent, while removing alcohol as a by-product by azeotropic distillation in a separating tank.

6. The process according to claim 1, 2, 3 or 4, wherein is used 3-oxopropionitrile compound of formula (1) wherein Ar<sup>1</sup> and Ar<sup>2</sup> have meaning similar to the above, which is produced by reacting the acetonitrile compound of formula (5) with the aromatic ester compound of formula (6) by use of alkali metal alkoxide in an aliphatic hydrocarbon solvent, while removing alcohol as a by-product by azeotropic distillation

in the presence of a polar solvent in a separating tank.

7. A process for producing 3-oxopropionitrile compound of formula (1) characterized by reacting the acetonitrile compound of formula (5) with the aromatic ester compound of formula (6) by use of an alkali metal alkoxide in an aliphatic hydrocarbon solvent, while removing alcohol as a by-product by azeotropic distillation in a separating tank.

8. A process for producing 3-oxopropionitrile compound of formula (1) characterized by reacting the acetonitrile compound of formula (5) with the aromatic ester compound of formula (6) by use of an alkali metal alkoxide in an aliphatic hydrocarbon solvent, while removing alcohol as a by-product by azeotropic distillation in the presence of a polar solvent in a separating tank.

9. The process for producing 3-oxopropionitrile compound according to claim 5, 6, 7 or 8, wherein the alkali metal alkoxide is sodium methoxide or methanol solution thereof.

10. The process for producing 3-oxopropionitrile compound according to claim 5, 6, 7 or 8, wherein the aliphatic hydrocarbon is heptane.

11. The process according to claim 6 or 8, wherein the polar solvent is a mixed solvent of diethylene glycol monoethyl ether and diethylene glycol dimethyl ether, or 5-ethyl-2-picoline.

12. A process for producing Z-3-acyloxyacrylonitrile compound characterized by isomerizing E-3-acyloxyacrylonitrile compound of formula (3) or a mixture thereof with Z-3-acyloxyacrylonitrile compound of formula (4) with an organic base such as amine or pyridine.

13. The process according to claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12, wherein Ar<sup>1</sup> is phenyl group that may be substituted, thiazolyl group that may be substituted, pyrazolyl group that may be substituted, or triazolyl group that may be substituted.

14. The process according to claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 or 13, wherein

Ar<sup>2</sup> is pyrazolyl group that may be substituted, or thiazolyl group that may be substituted.

15. The process according to claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12, wherein Ar<sup>1</sup> is 4-tert-butylphenyl group, and Ar<sup>2</sup> is 1,3,4-trimethyl-5-pyrazolyl group or 3-chloro-1,4-dimethyl-5-pyrazolyl group.

16. The process according to claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12, wherein Ar<sup>1</sup> is 2-phenyl-5-ethyl-1,2,3-triazol-4-yl, and Ar<sup>2</sup> is 1,3,4-trimethyl-5-pyrazolyl group or 3-chloro-1,4-dimethyl-5-pyrazolyl group.